# Animal Damage

## Various animal species cause physical damage

**Cause—**A small number of animal species cause significant damage to trees. The animals that primarily damage trees in the Rocky Mountain Region include deer, elk, porcupines, beaver, mice, squirrels, gophers, rabbits, and birds.

**Hosts—**All tree species can be damaged by animals, and damage occurs throughout the Region. The type and extent of damage varies by animal and tree species because animals differ in their preference for tree species.

**Signs and Symptoms—**In some situations, many trees in an area are affected, and in other situations, only individual trees are damaged. Damages include removal of bark, wood, foliage, and twigs. Effects of the damage include tree girdling, scarring, deforming, brooming, stunting, and callus ridge formation. Callus ridges are the result of natural healing of trees as new bark forms around damaged bark.

Common damages and their causes in the Region include: antler rubbing of tree bark by deer and elk (fig. 1); browsing of foliage, buds, and young shoots by ungulates (figs. 2-3); bark feeding by elk (fig. 4) or bear; girdling by various mammals (fig. 5), including porcupines (fig. 6) and beavers; rabbit and gopher chewing; and debarking or scratching by bears (fig. 7). Porcupines chew through the outer bark of branches and boles of conifers, especially in the winter. Bears may rip wide strips of bark from trees and scrape bark with their claws. The sapsuckers, large birds in the genus Sphyrapicus, make uniform horizontal rows of holes in the bark of conifer and hardwood species (fig. 8). Sapsuckers feed on sap that oozes from holes they make on the stem and on insects attracted to the sap. Tooth, claw, or antler scrape marks are usually visible in the sapwood of damaged trees. Rubbing by deer and elk often produces shredded bark attached to the damaged areas. Mechanical damage can be difficult to differentiate from animal damage unless the scrape marks or shredded bark are evident. Circumstances can provide clues to the cause of the damage.

Figure 1. Antler rubbing damage with shredded bark and callus ridges. *Photo: Susan K. Hagle, USDA Forest Service, Bugwood.org.*

Figure 2. Repeated browsing can cause the production of multiple stems or brooming. *Photo: Susan K. Hagle, USDA Forest Service, Bugwood.org.*

Figure 3. Aspen sucker browsed by elk. *Photo: James T. Blodgett, USDA Forest Service.*

Figure 4. Elk feeding damage on aspen bark, Salida Ranger District, San Isabel National Forest. *Photo: Dave Powell, USDA Forest Service, Bugwood.org.*

Figure 5. Tooth marks from vole feeding on a root. *Photo: Paul Bachi, University of Kentucky Research & Education Center, Bugwood.org.*

Figure 6. Tooth marks from porcupine feeding within the margins of a sporulating rust canker. *Photo: Brian W. Geils, USDA Forest Service, Bugwood.*

Figure 7. Bear claw marks are distinct when fresh. *Photo: USDA Forest Service, Bugwood.org.*

Figure 8. Sapsuckers make distinctive holes on the stem that are regularly spaced in rows. *Photo: James T. Blodgett, USDA Forest Service.*

Squirrels, porcupines, and mice often chew the bark around rust-induced cankers. However, they also feed in the top or mid-stems of healthy trees. Squirrels also clip small branches from trees, leaving green branches on the ground. Rabbits and ground-dwelling rodents feed on the bark of young trees near the ground and can scar or girdle trees. Beavers cut down larger trees for construction and/or collect branches from trees and saplings to eat. This results in damage near the ground, including girdling and felling of trees. Underground rodents such as pocket gophers feed on roots.

Seeds and cones can be damaged by rodents and birds and occasionally larger mammals such as bears.

**Impact—**The overall losses from wild animal damage are usually far less than losses caused by diseases, insects, fire, or even domestic animals. However, large losses can occur in limited areas, especially to aspen regeneration. The wounds allow entry of diseases (especially canker and wood decay fungi) and may attract insects.

If stems or branches are girdled, mortality of the tree part above the girdle results. Extensive damage without girdling can result in growth loss or stunting. In most cases, callus will form and trees will recover if not attacked by diseases or insects.

## Animal Damage - page 3

Regeneration can also be impacted. Browsing can cause brooming, mortality, and vegetation removal, resulting in severe loss of forest regeneration. This is especially common with aspen and other hardwood species. Rodents can girdle seedlings and saplings. Rodents and birds eat and disperse seeds, which can both negatively and positively affect regeneration.

**Management—**Numerous management methods and tools are available, including chemical deterrents/repellents, exclusion with fencing or other means, devices to frighten animals, habitat modification, relocation, traps, or lethal control. The application of any of these methods depends on the pest involved, the setting, and local laws and regulations.

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